

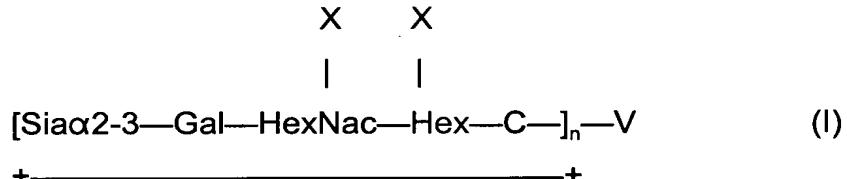
Appl. No. 10/502,049  
Amendment dated: February 19, 2008  
Reply to OA of: October 19, 2007

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

Claims 1-13(canceled).

14(currently amended). A method for immunomodulation, immunosuppression, prevention or treatment of infections in a human or animal patient which comprises administering an effective amount to the patient of sialyzed carbohydrates of the following formula I having at least one carbohydrate unit of formula II as shown in formula I:



(II)

wherein

Sia means a sialic acid or an  $\Theta$ -acetyl O-acetyl sialic acid derivative in an  $\alpha$ 2-3 bond,

Gal means a galactose-monosaccharide unit,

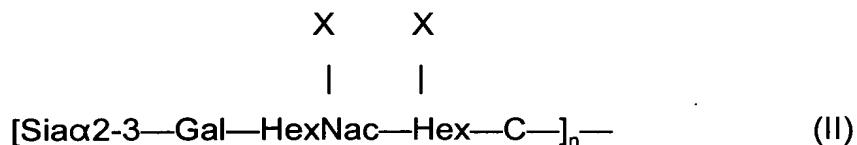
HexNac means an N-acetylated galactosamine-monosaccharide unit or glucosamine-monosaccharide unit (GalNAc or GlcNAc),

Hex means a galactose-monosaccharide unit or glucose-monosaccharide unit (Gal or Glc),

C represents HexNac or Hex or is absent,

n represents 1 to 50,

V represents OH, a carbohydrate residue or a connecting point on a carrier T, with the proviso that, if V represents OH, n represents 1, and, if V represents a carbohydrate residue or a carrier T, n means the number of the carbohydrate units that are each directly bound to this carbohydrate residue or carrier and which are of the formula II



wherein X means a sialic acid or an  $\Theta$ -acyl O-acetyl sialic acid derivative thereof, wherein a second sialic acid or an  $\Theta$ -acyl O-acetyl sialic acid derivative or several sialic acids or  $\Theta$ -acyl O-acetyl sialic acid derivatives can be bound to the sialic acid or the  $\Theta$ -acyl O-acetyl sialic acid derivative in an  $\alpha$ 2-8 bond, a phosphate group, sulphate group or carboxyl group, or a monosaccharide including a phosphate group, sulphate group or carboxyl group, and only one of the residues X is present, and n is as defined.

15(currently amended). The method according to claim 14, characterized in that one, two, or three, four, or all of the following criteria I) through iv) iii) are met:

- I) Sia represents acetyl neuraminic acid (NeuAc) or N-glycolyl neuraminic acid (NeuGc),
- ii) ~~the sialic acid derivative or the sialic acid derivatives of the residues Sia and X is/are an  $\Theta$ -acyl derivative;~~
- iii) ii) the carrier T is a peptide, a protein, a polymer or a biopolymer, with the linkage with said peptide or protein in particular being N-glycosidic or O-glycosidic, and
- iv) iii) the carbohydrate residue constituting the residue V is a monosaccharide residue, an oligosaccharide residue or a polysaccharide residue.

16(previously presented). The method according to claim 14, characterized in that the carbohydrates of formula I are selected from the group consisting of disialyl-lacto-N-tetraose (DS-LNT, V = OH, HexNac = GlcNAc, Hex = galactose (Gal), C = glucose, Sia =  $\alpha$ 2-3 NeuAc, X =  $\alpha$ 2-6 NeuAc on HexNac), and disialyl-lacto-N-neotetraose (DS-LNnT), glycomacropeptide (GMP), ganglioside G<sub>D1a</sub>, ganglioside G<sub>T1b</sub> and ganglioside G<sub>T1c</sub>.

17(previously presented). The method according to claim 14, characterized in that T represents lipophilic compounds, and the carbohydrate unit or carbohydrate units of formula II represents or represent the head group(s) thereof.

18(previously presented). The method according to claim 17, characterized in that said lipophilic compounds are glycolipids.

19(previously presented). The method according to claim 18, characterized in that said lipophilic compounds are gangliosides.

20(previously presented). The method according to claim 14, characterized in that the carbohydrate or carbohydrates of formula I is/are used in an amount of at least 1 mg per kg of body weight of said patient.

21(previously presented). The method according to claim 14, for the prevention and treatment of infections of the gastrointestinal tract, blood system, respiratory passages, urogenital tract, as well as the nasopharynx.

22(currently amended). The method according to claim 14, characterized in that the carbohydrate or carbohydrates of formula I are incorporated into a fluid or solid food composition (~~with the exception of human milk~~) whereby said composition is not human milk, dietetic composition or pharmaceutical composition for administration to a human

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or an animal, or serve for the preparation of such a composition for the immunomodulation, immunosuppression and treatment of infections in humans and animals.

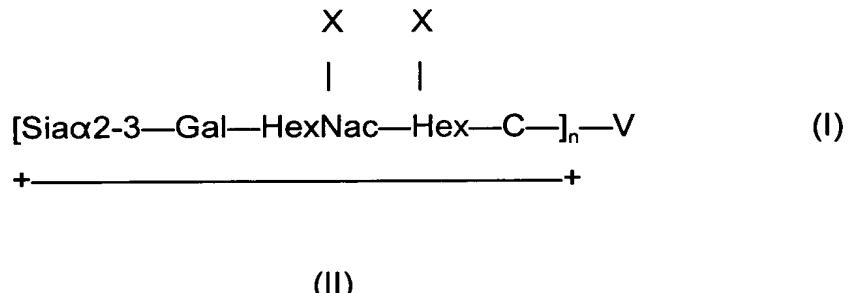
23(previously presented). The method according to claim 22, characterized in that the pharmaceutical composition serves for an oral, lingual, nasal, bronchial, vaginal, topical (skin and mucosa) and *per os* administration, for an administration by means of a probe into the stomach of a human or an animal, or for an administration as an infusion.

24(previously presented). Food composition, dietetic composition or pharmaceutical composition containing at least one carbohydrate of formula I as described in claim 1.

25(previously presented). The composition according to claim 24, characterized in that the composition may contain a further carbohydrate or several further carbohydrates, which are different from the carbohydrates of claim 14 a further active agent or several further active agents and/or a further ingredient, which is known and suited for the corresponding composition, or more of such ingredients, wherein in the case of a pharmaceutical composition a usual auxiliary agent or several usual auxiliary agents, including diluents, moisturizing agents, thickening agents, flavoring agents, sweetening agents and carriers, may be present, and in the case of a food composition or a dietetic composition, at least one further food component may be present.

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26(currently amended). Sialyzed carbohydrates of the following formula I having at least one carbohydrate unit of the following formula II:



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Sia means a sialic acid or an  $\Theta$ -acyl O-acetyl sialic acid derivative in an  $\alpha$ 2-3 bond,

Gal means a galactose-monosaccharide unit,

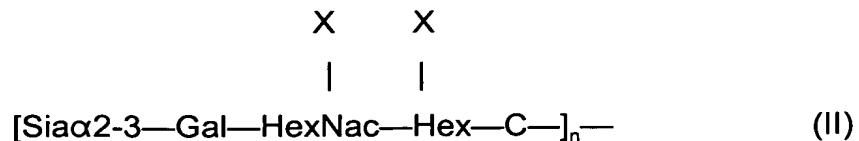
HexNac means an N-acetylated galactosamine-monosaccharide unit or glucosamine-monosaccharide unit (GalNAc or GlcNAc),

Hex means a galactose-monosaccharide unit or glucose-monosaccharide unit (Gal or Glc),

C represents HexNac or Hex or is absent,

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V represents OH, a carbohydrate residue or a connecting point on a carrier T, with the proviso that, if V represents OH, n represents 1, and, if V represents a carbohydrate residue or a carrier T, n means the number of the carbohydrate units that are each directly bound to this carbohydrate residue or carrier and which are of the formula II



X means a sialic acid or an  $\Theta$ -acetyl O-acetyl sialic acid derivative thereof, wherein a second sialic acid or an  $\Theta$ -acetyl O-acetyl sialic acid derivative or several sialic acids or  $\Theta$ -acetyl O-acetyl sialic acid derivatives can be bound to the sialic acid or the  $\Theta$ -acetyl O-acetyl sialic acid derivative in an  $\alpha$ 2-8 bond, a phosphate group, sulphate group or carboxyl group, or a monosaccharide including a phosphate group, sulphate group or carboxyl group, and only one of the residues X is present.

27(currently amended). The method according to claim 15, characterized in that all of the following criteria i) through ~~iv)~~ iii) are met:

- I) Sia represents acetyl neuraminic acid (NeuAc) or N-glycolyl neuraminic acid (NeuGc),
- ii) ~~the sialic acid derivative or the sialic acid derivatives of the residues Sia and X is/are an  $\Theta$ -acetyl derivative;~~
- iii) ii) the carrier T is a peptide, a protein, a polymer or a biopolymer, with the linkage with said peptide or protein in particular being N-glycosidic or O-glycosidic, and
- ~~iv)~~ iii) the carbohydrate residue constituting the residue V is a monosaccharide residue, an oligosaccharide residue or a polysaccharide residue.

28(previously presented). The method of claim 16 for the treatment of infections of the gastrointestinal tract of a human patient.